

MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS,
MILL CREEK 2 PENSTOCK
Mill Creek
Yucaipa vicinity
San Bernardino County
California

HAER No. CA-2272-F

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of Interior
1111 Jackson Street
Oakland, California 94607

HISTORIC AMERICAN ENGINEERING RECORD
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Location: The Mill Creek 2 Penstock (MC 2 Penstock) is located approximately 650 feet east of the Mill Creek 2 and 3 Powerhouse within Mill Creek Canyon in San Bernardino County, California. (USGS topographic map Yucaipa, Section 13; T. 1S., R. 1W.).

Significance: The MC 2 Penstock is one of the key components of the Mill Creek 2 Hydroelectric System (MC 2). It is a high pressure pipe (known as the penstock) that connects to the powerhouse. MC 2 is one of the earliest examples of a high-head hydroelectric system within the United States and one of the first commercial three-phase alternating current stations in California. Three-phase alternating later became the industry standard.

Description: The MC 2 Penstock is 1,411 feet long, and is located underground. It consists of a steel pipe with an 18-inch diameter, made with double-riveted longitudinal seams and single-riveted round seams. In order to prevent corrosion, the pipes were originally double-dipped in asphaltum prior to being installed. The pipes were laid three to six feet deep and backfilled with earth and rock. The pipes were then held in place with heavy concrete anchors at five points along the line. The anchors were dovetailed into the rock at the sides and bottoms of the trenching, in order to prevent the pipes from moving or buckling. The main pipe divides into three separate pipes as it nears the Powerhouse. Two of the three pipes are 13 inches in diameter and originally brought water to the two generators. The third pipe is six inches in diameter and provided water for the two exciters.⁶¹

History: The MC 2 Penstock was constructed as part of the Mill Creek 2 Hydroelectric System. The MC 2 system was constructed between 1889 and 1899 by the Redlands Electric Light and Power Company, later absorbed by Edison Electric Company of Los Angeles in 1901. MC 2 has not been in operation since 1992, when it was damaged in a flood. Today MC 2 is owned by Southern California Edison. Please see the Historic Context section in the general Historic American Engineering Record for the Mill Creek 2 and 3 Hydroelectric Systems (HAER No. CA-2272) for additional information.

Sources:

Fowler, Frederick Hall. *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*. Washington, D.C.: Government Printing Office, 1923.

White, David R. M. "Cultural Resource Management Plan for the Southern California Edison Company Mill Creek Hydroelectric Project (FERC Project No. 1934) San Bernardino County, California," June 1993.

⁶¹ ⁶¹ George P. Low, "The Generating, Transmission and Distribution Systems of The Edison Electric Company of Los Angeles, Cal.," *The Journal of Electricity, Power and Gas*, vol. XIII, no. 1, January, 1903, 22-23.

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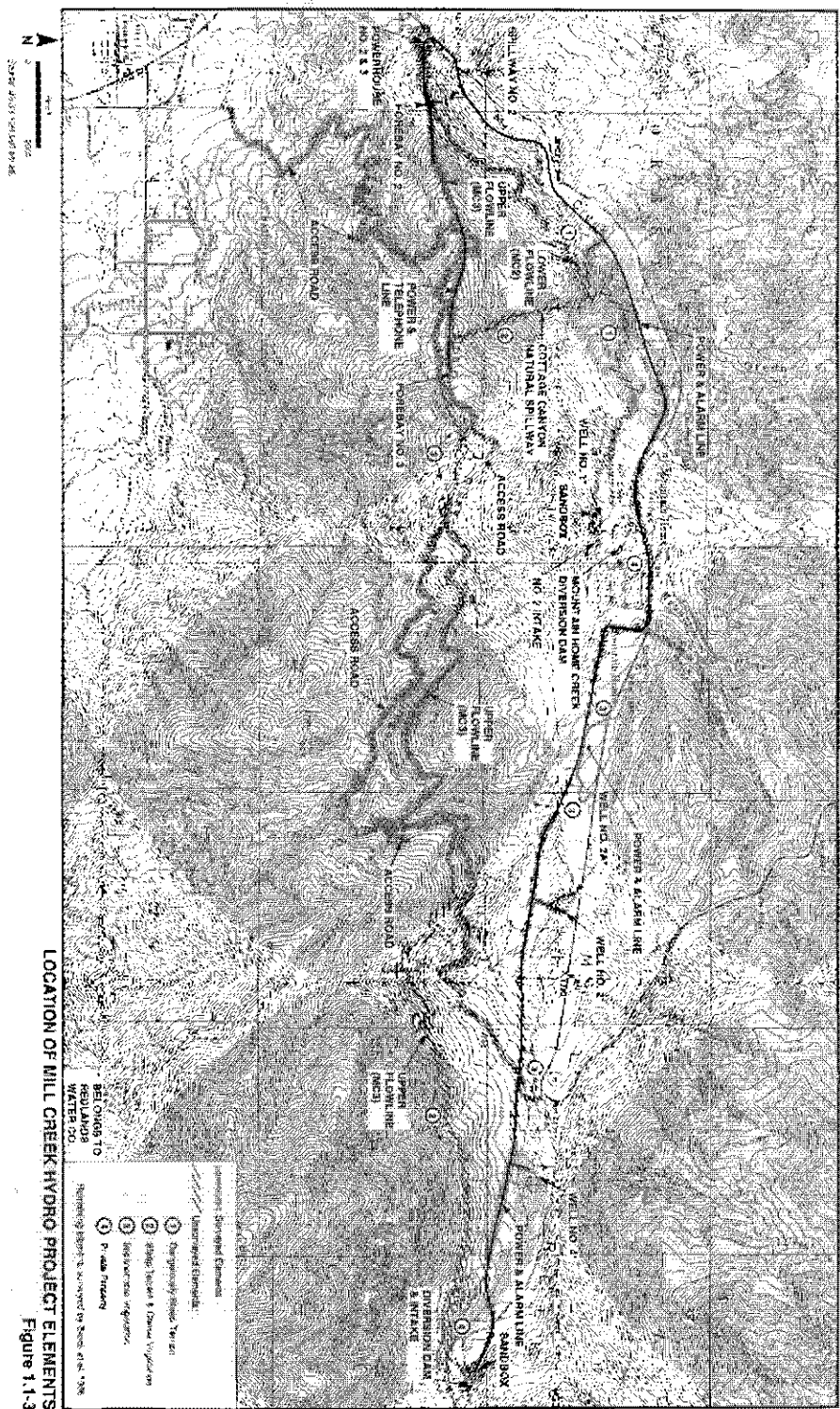
"Means Much to Redlands: Big Light and Power Deal Closed," *Los Angeles Times*. May 25, 1901, 8.

"Redlands Electric Light & Power Co., Edition Electric Co. of Los Angeles, Mill Creek Powerhouses," *National Register of Historic Places Inventory – Nomination Form*, April 30, 1985, item number 7, 10.

Historian: Christeen Taniguchi, Senior Architectural Historian, and Nicole Collum, Architectural Historian II, Galvin Preservation Associates, 1611 S. Pacific Coast Highway, #104, Redondo Beach, CA 90277, 2008-2009.

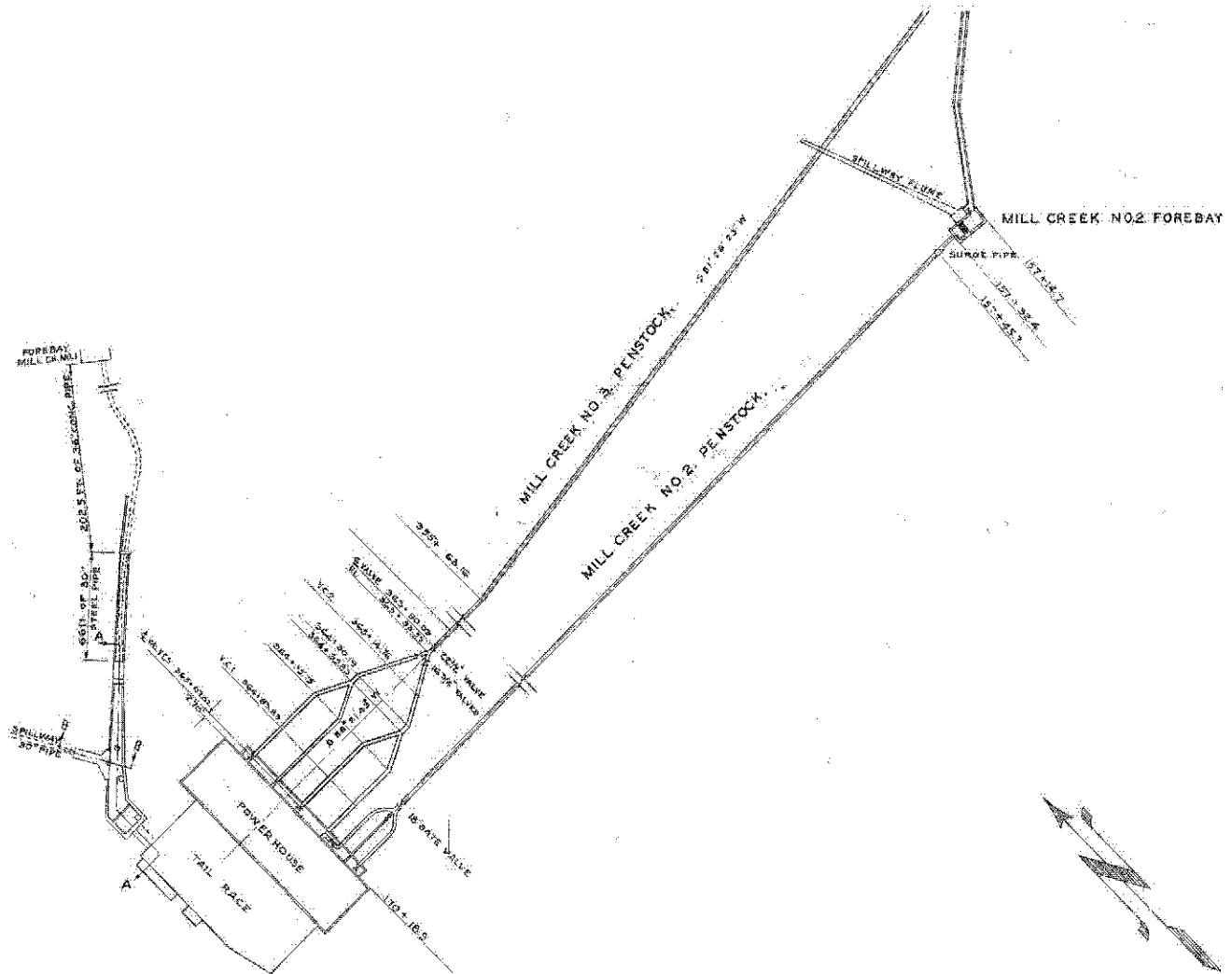
Project Information: MC 2 has not operated since 1992 when it was damaged during floods. It was not, however, decommissioned. The Southern California Edison Company, in conjunction with the San Bernardino National Forest, the agency that owns the property, proposes to formally decommission the facility. This process will include filling the sandbox and forebay with slurry, and removing the metal features. Although MC 3 is still in operation, it is also being recorded as part of this project because of the system's close association with MC 2.

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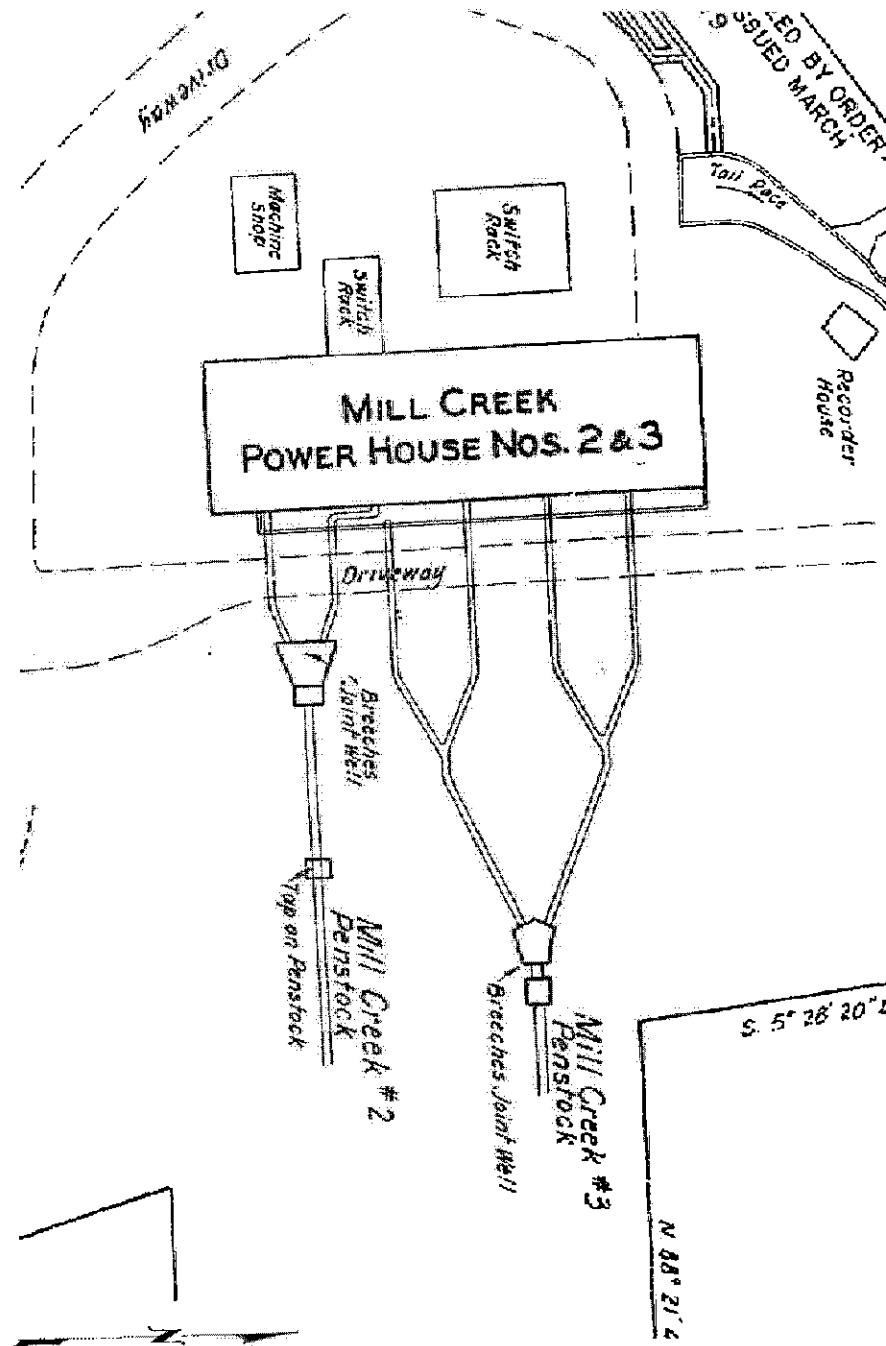


Location of Mill Creek Hydro Project Elements. (Map Courtesy of Southern California Edison)

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Site Plan for Mill Creek 2 Penstock. (Plan Courtesy of Southern California Edison).



Detail Plan View of Mill Creek 2 Penstock Location. Detail taken from Exhibit G, Mill Creek Powerhouses No. 2 and No. 3 and No. 3 Intake Project 1934. (Plan Courtesy of Southern California Edison).